ROAD SIGN FEATURE EXTRACTION AND RECOGNITION USING DYNAMIC IMAGE PROCESSING

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Abstract. *In the research field of intelligent transportation systems (ITS), various suggestions have been made concerning road signs which can be automatically recognized by driver-support systems. Almost all of the methods proposed for road sign identification and recognition are processes performed using an instantaneously-acquired static image. As a result, the processing time is a problem. The method which this paper proposes assumes the use of an on-board camera, and involves processing of a dynamic image, allowing effective processing in case when the sign is temporarily hidden by another object. In addition, this paper proposes a simple algorithm for sign detection and recognition that reduces the amount of required calculation. In this paper, nine kinds of signs, such as "STOP," "NO ENTRY" and "NO PASSAGE" were prepared, each 1/3 the size of the actual signs. Experiments were then carried out for recognition of these signs under various kinds of measurement conditions.*
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1. **Introduction.** At the present time, many studies are being conducted working toward the implementation of an Intelligent Traffic System (ITS). One field of this research is driving support systems, and many studies are being conducted to develop systems which identify and recognize road signs in front of the vehicle, and then use this information to notify the driver or to control the vehicle [1-9].

Development of a system which can provide road information to the driver at any time is already underway. This system uses wireless communication with special narrow-band signal transmitters installed on the roadside, a technology which has already been commercialized with ETC. With the construction of this type of infrastructure, it is believed that there will be a change in the method of providing road sign information from the current method of providing visual information. However, much time will be required before this infrastructure covers all roads in local areas, and it is likely that as long as vehicles are driven by human drivers, road signs will never disappear as a means of providing traffic information.